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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,197	01/29/2001	Joseph J. Sanelle	81285CIP	9117

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EXAMINER

CHUNG, DAVID Y

ART UNIT PAPER NUMBER

2871

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/772,197

Applicant(s)

SANELLE ET AL.

Examiner

David Y. Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 38-54 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,7-10,13,14 and 42-54 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,11,12,16 and 38-40 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**1. Claims 1, 2, 5, 6, 11, 12 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (U.S. 5,818,559) in further view of Bahadur (Liquid Crystals 1990).**

As to claim 1, note the following elements in figure 1: liquid crystal (10), resin substrates (8 and 12), transparent electrodes (9 and 11), phase retarders (6 and 14), adhesive layers (5, 7, 13 and 15), polarizing films (3 and 17), and protective films (2, 4, 16 and 18). Protective film 4 is considered the first transparent plate. Protective film 18 is considered the second transparent plate. Yoshida discloses that the substrate of the liquid crystal cell and the protective films require high transparency. See column 1, lines 10-35.

Yoshida does not explicitly state that the polarizers are crossed. Bahadur discloses that for cases other than when perpendicular viewing is very important, normally white mode with crossed polarizing axes was standard. See page 189. It

would have been obvious to one of ordinary skill in the art at the time of invention to cross the polarizers because it was the most widely applicable arrangement.

As to claim 5, the protective film 2 in figure 1 of Yoshida is considered the third transparent plate.

As to claims 2 and 6, discloses that the protective films are made of resin instead of glass. It was well known that glass was cheap to manufacture and had a high level of transparency. Yoshida discloses that the protective films require a high level of transparency as discussed above. It would have been obvious to one of ordinary skill in the art at the time of invention to form the protective films with glass because glass was cheap to manufacture and satisfied the level of transparency required for the protective film.

As to claim 11, Yoshida does not explicitly disclose an active matrix liquid crystal display panel. Bahadur discloses that active matrix displays can realize a very high quality image, suitable for color TV displays and computer monitors. See page 172. It would have been obvious to one of ordinary skill in the art at the time of invention for the display panel of Yoshida to be active matrix because of the high image quality.

As to claim 12, Yoshida discloses that a backlight is provided on the surface of polarizing sheet III, which would be behind the second transparent plate (protective film 18). See column 7, lines 1-2.

As to claim 16, figure 1 of Yoshida shows the front polarizer (polarizer 3) adhered directly to the third transparent plate (protective film 2).

**2. Claims 38-40 rejected under 35 U.S.C. 103(a) as being unpatentable over Ziegler (U.S. 4,657,348) in further view of Mikura et al. (U.S. 5,880,800) and Sampica et al. (U.S. 5,867,241).**

Note the following elements in figure 1 of Ziegler: front cover 18, front circular polarizer 19, LCD cell 11, and rear linear polarizer 14. Note the triangular air gap between the front polarizer 19 and the liquid crystal cell 11.

Ziegler does not disclose adhering the various elements with an index-matched pressure sensitive adhesive. Mikura et al. discloses that pressure sensitive adhesives are excellent in heat resistance and moisture resistance, are difficult to cause foaming and peeling even in a high temperature and high humidity atmosphere, and are therefore particularly suitable for use in the formation of a liquid crystal display. See column 1, lines 5-10. It would have been obvious to one of ordinary skill in the art at the invention to adhere the various elements of Ziegler using a pressure sensitive adhesive because of its excellent heat resistance and moisture resistance.

Mikura et al. does not disclose an index matched pressure sensitive adhesive. Sampica et al. discloses that within an LCD, it is critical to the display performance for the index of refraction of the adhesive to closely match that of the optical components. See column 1, lines 25-30. It would have been obvious to one of ordinary skill in the art at the time of invention to select a pressure sensitive adhesive such that the index of refraction of the adhesive matched the index of refraction of the optical components of the LCD because this was critical to the display performance.

Ziegler does not disclose the structure of the liquid crystal cell. However, it was known that the basic structure of a liquid crystal cell comprised two transparent substrates, each having a transparent conductive layer formed thereon, sandwiching a layer of liquid crystal such that the two transparent conductive layers oppose each other within the cell. It was known that this structure was the most cost-effective for producing an LCD. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form an LCD having this structure because it was cost-effective.

As to claim 39, Ziegler does not disclose forming the front cover from glass. It was well known that glass was cheaper to manufacture and had a higher level of transparency than plastic. It would have been obvious to one of ordinary skill in the art at the time of invention to form the front cover with glass because glass was cheaper to manufacture and had a higher level of transparency than plastic.

As to claim 40, Ziegler does not disclose forming the front cover from plastic. It was well known that plastic was more flexible and was much less likely to crack or shatter than glass. It would have been obvious to one of ordinary skill in the art at the time of invention to form the exterior plates using plastic because plastic was more flexible and less likely to crack or shatter than glass.

### ***Response to Arguments***

Applicant's arguments filed August 23, 2004 have been fully considered but they are not persuasive.

With respect to claim 1, examiner disagrees with applicant's assertion that it would be an unreasonable reading of Yoshida to interpret elements 3 and 17 by themselves as being the front and rear polarizers, respectively. Yoshida discloses elements 3 and 17 as being polarizing films. See column 6, lines 60-65. Although elements 2, 4, 16 and 18 serve as protective films, they do not manipulate light in any way. Only polarizing films 3 and 17 function as light polarizing elements. Therefore, it would be reasonable to interpret polarizing films 3 and 17 as being the front and rear polarizers.

With respect to claim 38, examiner disagrees with applicant's assertion that Ziegler does not disclose an air gap formed by the front polarizer assembly and the liquid crystal display. The quarter-wave plate 16 can be reasonably interpreted as being part of the liquid crystal display because it is directly adhered to substrate 12 and is part of the image forming apparatus.

***Allowable Subject Matter***

Claim 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, as previously indicated in the office action mailed on February 18, 2004.

Claim 40 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record did not teach or suggest a transparent cover positioned in front of the front polarizer assembly and in contact with a second index-matched pressure sensitive adhesive, wherein the transparent cover is a touch panel.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

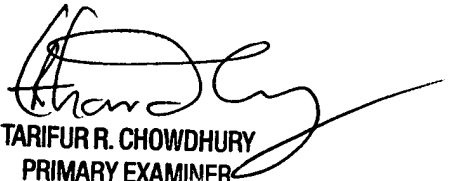
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (571) 272-2288. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER

David Chung  
GAU 2871  
11/10/04